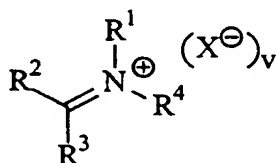


## WHAT IS CLAIMED IS:

1. A bleach system for laundering fabrics in need of cleaning comprising from about 0.001 ppm to about 1.4 ppm of a cationic organic catalyst compound selected from the group consisting of:

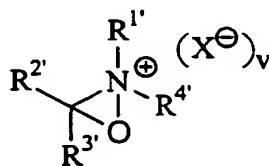
5 a) aryliminium cations and aryliminium polyions, which have a net charge of from about +3 to about -3, that are represented by the formula [I]:



[I]

where  $\text{R}^2$ - and  $\text{R}^3$  are independently selected from substituted or unsubstituted radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic and carboalkoxy radicals;  $\text{R}^1$  is  $\text{R}^4$  are  
 15 independently selected from substituted or unsubstituted, saturated or unsaturated radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, alkoxy, keto and carboalkoxy radicals; and  $\text{X}^-$  is a suitable charge-balancing counterion and  $v$  is an integer from 1 to 3;

b) oxaziridinium cations and polyions, which have a net charge of from about +3 to about -3, that are represented by the formula [III]:



[III]

where  $\text{R}^{2'}$  and  $\text{R}^{3'}$  are independently selected from substituted or unsubstituted radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic and carboalkoxy radicals;  $\text{R}^{1'}$  and  $\text{R}^{4'}$  are  
 25 independently selected from the group consisting of substituted or unsubstituted, saturated or unsaturated, H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano,

alkoxy, keto and carboalkoxy radicals; and  $X^-$  is a suitable charge-balancing counterion and  $v$  is an integer from 1 to 3; and

c) mixtures thereof.

5 2. The bleach system according to Claim 1 wherein said bleach system further comprises from about 2.0 ppm to about 1200 ppm of one or more peroxygen source.

3. The bleach system according to Claim 1 wherein said bleach system further comprises from about 0.5 ppm to about 300 ppm of one or more peracids.

10

4. The bleach system according to Claim 1 wherein said bleach system further comprises from about 1.0 ppm to about 600 ppm of one or more peroxygen compounds.

15 5. The bleach system according to Claim 2 wherein said peroxygen source is selected from the group consisting of:

(a) preformed peracid compounds selected from the group consisting of percarboxylic acids and salts, percarbonic acids and salts, perimidic acids and salts, peroxymonosulfuric acids and salts, and mixtures thereof;

20 (b) hydrogen peroxide sources selected from the group consisting of perborate compounds, percarbonate compounds, perphosphate compounds and mixtures thereof; and a bleach activator.

25 6. The bleach system according to Claim 1 wherein said cationic organic catalyst compound is present at a concentration of from about 0.01 ppm to about 1.4 ppm.

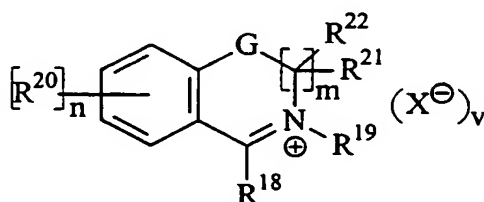
7. The bleach system according to Claim 6 wherein said cationic organic catalyst compound is present at a concentration of from about 0.1 ppm to about 1.0 ppm.

30 8. The bleach system according to Claim 7 wherein said cationic organic catalyst compound is present at a concentration of from about 0.2 ppm to about 0.8 ppm.

9. The bleach system according to Claim 8 wherein said cationic organic catalyst compound is present at a concentration of from about 0.3 ppm to about 0.7 ppm.

10. The bleach system according to Claim 1 wherein said cationic organic catalyst compound is selected from the group consisting of:

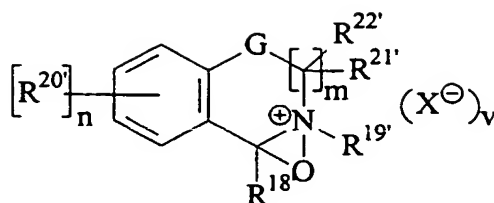
a) aryliminium cations and aryliminium polyions, which have a net charge of from about +3 to about -3, that are represented by the formula [XI]:



[XI]

where m is 1 to 3 when G is present and m is 1 to 4 when G is not present; and n is an integer from 0 to 4; each R<sup>20</sup> is independently selected from a substituted or unsubstituted radical selected from the group consisting of H, alkyl, cycloalkyl, aryl, fused aryl, heterocyclic ring, fused heterocyclic ring, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic, and carboalkoxy radicals, and any two vicinal R<sup>20</sup> substituents may combine to form a fused aryl, fused carbocyclic or fused heterocyclic ring; R<sup>18</sup> may be a substituted or unsubstituted radical selected from the group consisting of H, alkyl, cycloalkyl, alkaryl, aryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic and carboalkoxy radicals; R<sup>19</sup> is a radical selected from the group consisting of substituted or unsubstituted, saturated or unsaturated, H, alkyl, cycloalkyl, alkaryl, aryl, aralkyl and heterocyclic ring; G is selected from the group consisting of: (1) -O-; (2) -N(R<sup>23</sup>)-; and (3) -N(R<sup>23</sup>R<sup>24</sup>)-; R<sup>21</sup>-R<sup>24</sup> are substituted or unsubstituted radicals independently selected from the group consisting of H, oxygen, linear or branched C<sub>1</sub>-C<sub>12</sub> alkyls, alkenes, alkoxy, aryls, alkyls, aralkyls, cycloalkyls and heterocyclic rings; provided that any of R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>-R<sup>24</sup> may be joined together with any other of R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>-R<sup>24</sup> to form part of a common ring; any geminal R<sup>21</sup>-R<sup>22</sup> may combine to form a carbonyl; any vicinal R<sup>21</sup>-R<sup>24</sup> may join to form unsaturation; and wherein any one group of substituents R<sup>21</sup>-R<sup>24</sup> may combine to form a substituted or unsubstituted fused unsaturated moiety; X<sup>-</sup> is a suitable charge-balancing counterion and v is an integer from 1 to 3;

b) oxaziridinium cations and polyions, which have a net charge of from about +3 to about -3, that are represented by formula [XIII]:



[XIII]

wherein m is 1 to 3 when G is present and m is 1 to 4 when G is not present; and n is an integer from 0 to 4; each R<sup>20'</sup> is independently selected from a substituted or unsubstituted radical selected from the group consisting of H, alkyl, cycloalkyl, aryl, fused aryl, heterocyclic ring, fused heterocyclic ring, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic, and carboalkoxy radicals, and any two vicinal R<sup>20'</sup> substituents may combine to form a fused aryl, fused carbocyclic or fused heterocyclic ring; R<sup>18'</sup> may be a substituted or unsubstituted radical selected from the group consisting of H, alkyl, cycloalkyl, alkaryl, aryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic and carboalkoxy radicals; R<sup>19'</sup> may be a substituted or unsubstituted, saturated or unsaturated, radical selected from the group consisting of H, alkyl, cycloalkyl, alkaryl, aryl, aralkyl and heterocyclic ring. G is selected from the group consisting of: (1) -O-; (2) -N(R<sup>23'</sup>)-; and (3) -N(R<sup>23'</sup>R<sup>24'</sup>)-; R<sup>21'</sup>-R<sup>24'</sup> are substituted or unsubstituted radicals independently selected from the group consisting of H, oxygen, linear or branched C<sub>1</sub>-C<sub>12</sub> alkyls, alkenes, alkoxy, aryls, alkaryl, aralkyls, cycloalkyls and heterocyclic rings; provided that any of R<sup>18'</sup>, R<sup>19'</sup>, R<sup>21'</sup>-R<sup>24'</sup> may be joined together with any other of R<sup>18'</sup>, R<sup>19'</sup>, R<sup>21'</sup>-R<sup>24'</sup> to form part of a common ring; any geminal R<sup>21'</sup> - R<sup>22'</sup> may combine to form a carbonyl; any vicinal R<sup>21'</sup> - R<sup>24'</sup> may join to form unsaturation; and wherein any one group of substituents R<sup>21'</sup> - R<sup>24'</sup> may combine to form a substituted or unsubstituted fused unsaturated moiety; and wherein any one group of substituents R<sup>21'</sup> - R<sup>24'</sup> may combine to form a substituted or unsubstituted fused unsaturated moiety; X<sup>-</sup> is a suitable charge-balancing counterion and v is an integer from 1 to 3; and

c) mixtures thereof.

11. The bleach system according to Claim 10 wherein said cationic organic catalyst compound is selected from the group consisting of: (1) aryliminium cations or polyions of the formula [XI] wherein R<sup>18</sup> is H or methyl, and R<sup>19</sup> is H or substituted or branched C<sub>1</sub> - C<sub>18</sub> alkyl or cycloalkyl; (2) oxaziridinium cations or polyions of the formula [XIII] wherein R<sup>18'</sup> is H or methyl, and R<sup>19'</sup> is H or substituted or branched C<sub>1</sub> - C<sub>18</sub> alkyl or cycloalkyl; and (3) mixtures thereof.

12. The bleach system according to Claim 1 wherein said bleach system further comprises a surfactant.

13. The bleach system according to Claim 1 wherein said bleach system further comprises an enzyme.

14. The bleach system according to Claim 1 wherein said bleach system further comprises a chelating agent.

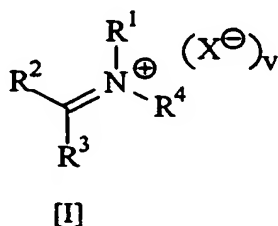
15. The bleach system according to Claim 2 wherein said peroxygen source and said cationic organic catalyst compound are present in said bleach system at a molar ratio of greater than 1:1.

16. The bleach system of Claim 1 made by the process comprising:

a) providing a wash solution; and

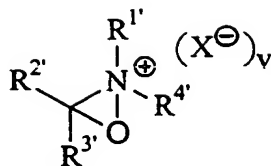
b) adding to said wash solution a bleach composition comprising an amount of cationic organic catalyst compound selected from the group consisting of:

i) aryliminium cations and aryliminium polyions, which have a net charge of from about +3 to about -3, that are represented by the formula [I]:



where  $\text{R}^2$  and  $\text{R}^3$  are independently selected from substituted or unsubstituted radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic and carboalkoxy radicals;  $\text{R}^1$  and  $\text{R}^4$  are independently selected from substituted or unsubstituted, saturated or unsaturated radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, alkoxy, keto and carboalkoxy radicals; and  $\text{X}^-$  is a suitable charge-balancing counterion and  $v$  is an integer from 1 to 3;

ii) oxaziridinium cations and polyions, which have a net charge of from about +3 to about -3, that are represented by the formula [III]:



[III]

where R<sup>2'</sup> and R<sup>3'</sup> are independently selected from substituted or unsubstituted radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic and carboalkoxy radicals; R<sup>1'</sup> and R<sup>4'</sup> are independently selected from the group consisting of substituted or unsubstituted, saturated or unsaturated, H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, alkoxy, keto, and carboalkoxy radicals; and X<sup>-</sup> is a suitable charge-balancing counterion and v is an integer from 1 to 3; and

iii) mixtures thereof.

such that the resulting concentration of the cationic organic catalyst compound in said wash solution is from about 0.001 ppm to about 5 ppm.

17. A method for laundering a fabric in need of laundering, said method comprises contacting said fabric with a laundry solution having a bleach system according to Claim 1.

18. The method according to Claim 17 wherein said fabric is a colored fabric.

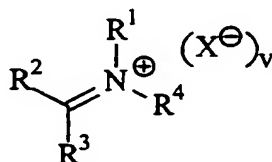
19. The method according to Claim 18 wherein said method is carried out in an automatic washing machine.

20. A bleach system for laundering fabrics in need of cleaning comprising

a) a peroxygen source; and

b) a cationic organic catalyst compound selected from the group consisting of:

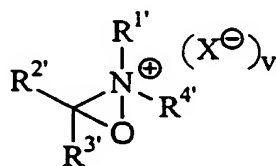
i) aryliminium cations and aryliminium polyions, which have a net charge of from about +3 to about -3, that are represented by the formula [I]:



[I]

where  $R^2$  and  $R^3$  are independently selected from substituted or unsubstituted radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic and carboalkoxy radicals;  $R^1$  and  $R^4$  are independently selected from substituted or unsubstituted, saturated or unsaturated radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, alkoxy, keto and carboalkoxy radicals; and  $X^-$  is a suitable charge-balancing counterion and  $v$  is an integer from 1 to 3;

ii) oxaziridinium cations and polyions, which have a net charge of from about +3 to about -3, that are represented by the formula [III]:



[III]

where  $R^{2'}$  and  $R^{3'}$  are independently selected from substituted or unsubstituted radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic and carboalkoxy radicals;  $R^{1'}$  and  $R^{4'}$  are independently selected from the group consisting of substituted or unsubstituted, saturated or unsaturated, H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, alkoxy, keto and carboalkoxy radicals; and  $X^-$  is a suitable charge-balancing counterion and  $v$  is an integer from 1 to 3; and

iii) mixtures thereof.

wherein said peroxygen source and said cationic organic catalyst compound are present in said bleach system at a molar ratio greater than 150:1.

21. The bleach system according to Claim 20 wherein said peroxygen source and said cationic organic catalyst compound are present in said bleach system at a molar ratio of from about 30,000:1 to about 150:1.

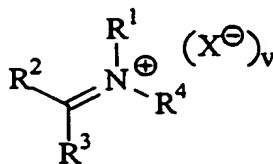
22. The bleach system according to Claim 21 wherein said peroxygen source and said cationic organic catalyst compound are present in said bleach system at a molar ratio of from about 20,000:1 to about 175:1.

5 23. The bleach system according to Claim 22 wherein said peroxygen source and said cationic organic catalyst compound are present in said bleach system at a molar ratio of from about 10,000:1 to about 200:1.

10 24. The bleach system according to Claim 23 wherein said peroxygen source and said cationic organic catalyst compound are present in said bleach system at a molar ratio of from about 5,000:1 to about 150:1.

25. A bleach system for laundering fabrics in need of cleaning comprising

- a) a peracid; and
- 15 b) a cationic organic catalyst compound selected from the group consisting of:
- i) aryliminium cations and aryliminium polyions, which have a net charge of from about +3 to about -3, that are represented by the formula [I]:



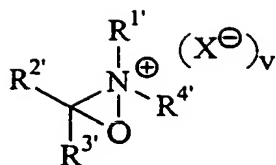
20

[I]

where  $\text{R}^2$  and  $\text{R}^3$  are independently selected from substituted or unsubstituted radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic and carboalkoxy radicals;  $\text{R}^1$  and  $\text{R}^4$  are independently selected from substituted or unsubstituted, saturated or unsaturated radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, alkoxy, keto and carboalkoxy radicals; and  $\text{X}^-$  is a suitable charge-balancing counterion and  $v$  is an integer from 1 to 3;

30 ii) oxaziridinium cations and polyions, which have a net charge of from about +3 to about -3, that are represented by the formula [III]:





[III]

where R<sup>2'</sup> and R<sup>3'</sup> are independently selected from substituted or unsubstituted radicals selected from the group consisting of H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, sulfonato, alkoxy, keto, carboxylic and carboalkoxy radicals; R<sup>1'</sup> and R<sup>4'</sup> are independently selected from the group consisting of substituted or unsubstituted, saturated or unsaturated, H, alkyl, cycloalkyl, aryl, alkaryl, aralkyl, heterocyclic ring, silyl, nitro, halo, cyano, alkoxy, keto and carboalkoxy radicals; and X<sup>-</sup> is a suitable charge-balancing counterion and v is an integer from 1 to 3; and

iii) mixtures thereof.

wherein said peracid and said cationic organic catalyst compound are present in said bleach system at a molar ratio greater than 1:1.